

FORM PTO-1449 (Modified for Citation of Foreign
Cited References)

ATTY. DOCKET NO.
USA.02.022

SERIAL NO.
10/091086

O I P E JG
LIST OF INFORMATION PROVIDED
BY APPLICANT
APR 15 2002
(Use several sheets if necessary)

APPLICANT
STEWART, et al

FILING DATE
March 5, 2002

GROUP
Unknown

REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

Examiner Initial		Document No.	Date*	Patentee	Date* Cited in Foreign Patent Office
TT	AA	5,930,889	8/3/1999	Klein	
TT	AB	6084781	7/4/2000	Klein	
TT	AC	6238223	5/29/2001	Cobbley	
TT	AD	5061549	10/29/1991	Shores	
TT	AE	5372883	12/13/1994	Shores	
TT	AF	6297560	10/02/2001	Capote et al	
TT	AG	6265776	7/24/2001	Gilleo	

FOREIGN PATENT DOCUMENTS

		Document No.	Country	Date*	Date* Cited in Foreign P.O.	English Translation Yes	No
	FA						
	FB						

OTHER PUBLICATIONS (AUTHOR, TITLE, DATE*, PLACE OF PUBLICATION, PERTINENT PAGES)

			Date* Cited in Foreign P.O.	English Translation Yes	No
TT	PA	Adamson, S.J., "CSP and flip chip underfill," Advanced Packaging, June 2001, pp. 37-44..			
TT	PB	Johnson, Zane, "BGA Underfills" Advanced Packaging, December 2001, pp. 29-33 ,			
TT	PC	Alpha Microelectronic: Staystik Adhesive for Mag Heads, [internet]Retrieved on December 19, 2001, URL:www.us-tech.com/april99/prods/cmp/cmp016.htm			
TT	PD	Center for Advanced Vehicle Electronics, "Ball Grid Array Reliability" [Internet] Retrieved on January 8, 2002, URL:www.eng.auburn.edu/department/ee/cave/bgareliability.html			
TT	PE	Brofman, P.J., "Effect of Underfill Properties on Flip Chip Plastic BGA (FC-PBGA) Reliability," IPC, Session P-MT1/5-(1-5); Presented at Apex 2000, March 14-16, 2000; Long Beach Convention Center, Long Beach, CA			

EXAMINER

DATE CONSIDERED 09/08/04

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of the form with next communication to Applicant.

1. The attached cited information should not be construed as an admission that any of the above items are prior art to the subject invention.
2. This is not a representation that a search has been made.

*Date when provided in xx/yy/zz format represents MONTH/DAY/YEAR.

FORM PTO-1449 (Modified for Citation of Foreign
Cited References)

ATTY. DOCKET NO.
USA.02.022

SERIAL NO.
10/091086

O P E R A T I O N
LIST OF INFORMATION PROVIDED
BY APPLICANT
APR 15 2002
(Use several sheets if necessary)

APPLICANT
STEWART, et al

FILING DATE
March 5, 2002

GROUP
Unknown

REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

Examiner Initial		Document No.	Date*	Patentee	Date* Cited in Foreign Patent Office
TJ	AH	5783867	7/21/1998	Belke, et al	
TJ	AI	6177728	1/23/2001	Susko, et al	
TJ	AJ	5401536	3/28/1995	Shores	

OTHER PUBLICATIONS (AUTHOR, TITLE, DATE*, PLACE OF PUBLICATION, PERTINENT PAGES)

			Date* Cited in Foreign P.O.	English Translation Yes	No
TJ	PF	Adamson, Steven J, "When to Underfill Chip Scale Packages, Design Consideration for Portable Electronic Applications," IPC, Session P-AD2/2-(1-8); Presented at Apex 2000, March 14-16, Long Beach Convention Center			
TJ	PG	Ghaffarian, R., "Impact of CSP Assembly Underfill Reliability," IPC, Session P-AD2/3-(1-7); Presented at Apex 2000, March 14-16, Long Beach Convention Center			
TJ	PH	Yaeger, E., "Beyond Flip-Chip, Underfills Enhance CSP Reliability," Chip Scale Review, March 2001, pp. 61-66			
TJ	PI	Katze, D., "Evaluations of No-Flow Fluxing Underfills with BGA, CSP and Flip Chip on Board Assemblies," IPC, Session P-MT1/2-(1-7), Presented at Apex 2000, Long Beach Convention Center			
TJ	PJ	Gilleo, K., "Thermoplastic Die Attach Adhesive for Today's Packaging Challenges," [internet] URL: http://www.cooksonsemi.com/tech_art/staystik.htm			
TJ	PK	Hannan, N., "Critical Aspects of Reworkable Underfills for Portable Consumer Products," 2001 Electronic Components and Technology Conference, 2001 IEEE, pp 181-187			
TJ	PL	Chapter C: Conductive Polymers, Level 1: Introduction [internet], last updated on 2000-09-07; URL: http://extra.ivf.se/ngl/C-polymerBonding/ChapterC.htm			
TJ	PM	Kristiansen, H., "Adhesives in Electronics," Chalmers Tekniska Hogskola, SINTEF Microelectronics; Presented at International Microelectronics and Packaging Society, Flipchip Technology Workshop, June 18-20, 2001			
TJ	PN	Tong, Q., "Novel Fast Cure and Reworkable Underfill Materials," 1999 Electronic Components and Technology Conference, 0-7803-5234-3/99, 1999 IEEE, pp.			

EXAMINER

*Tim Van*DATE CONSIDERED *09/08/04*

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of the form with next communication to Applicant.

1. The attached cited information should not be construed as an admission that any of the above items are prior art to the subject invention.

2. This is not a representation that a search has been made.

*Date when provided in xx/yy/zz format represents MONTH/DAY/YEAR.

FORM PTO-1449 (Modified for Citation of Foreign Cited References)			ATTY. DOCKET NO. USA.02.022	SERIAL NO. 10/091086
 LIST OF INFORMATION PROVIDED BY APPLICANT APR 15 2002 <small>(Use several sheets if necessary)</small>			APPLICANT STEWART, et al	
			FILING DATE March 5, 2002	GROUP Unknown
REFERENCE DESIGNATION	U.S. PATENT DOCUMENTS			
Examiner Initial	Document No.	Date*	Patentee	Date* Cited in Foreign Patent Office
OTHER PUBLICATIONS (AUTHOR, TITLE, DATE*, PLACE OF PUBLICATION, PERTINENT PAGES)				Date* Cited in Foreign P.O. English Translation Yes No
TT	PO	Nguyen, L., "Reworkable Flip Chip Underfill-Materials and Processes," Proc. IMAPS International Symposium on Microelectronics, pp. 707-713 (1998).		
TT	PP	Gilleo, K., "The Great Underfill Race," [internet] URL: http://www.cooksonsemi.com/tech_art/polysolder.htm		
TT	PQ	Gilleo, K., "Wafer-Level Flux Underfill: Underflip," Presented at Apex 2000, March 14-16, 2000; Long Beach Convention Center; Session P-MT1/4-(1-5)		
TT	PR	Thorpe, R., "Low Cost Flip Chip Processing Utilizing No Flow Underfill Materials," Presented at Apex 2000, March 14-16, 2000; Long Beach Convention Center; Session P-AP3/3-(1-8)		
TT	PS	Hackett, S., "A No-flow Underfill With Excellent Reliability Performance," IMAPS Flip Chip 2001 Austin, Texas June 18 - 19, 2001		
TT	PT	Suzuki, O., "Research on the Development of Advanced Non Conductive Paste (ANCP), Imaps Conference on Flip Chip Technology in Austin, Texas; June 18-19, 2001		
TT	PU	PRC Research Project Summaries, Flip Chip Assembly Thrust, [internet] Obtained October 31, 2001, URL: www.ee.gatech.edu/research/PRC/research/projsummary/asm.htm		
TT	PV	Emerson, J., "Techniques for Determining the Flow Properties of Underfill Materials," 1999 electronic Components and Technology Conference, 0-7803-5234-3/99		
TT	PW	Fine, P., "Flip Chip Underfill Flow Characteristics and Prediction," 1999 Electronic Components and Technology Conference, 0-7803-5234-3/99		
EXAMINER	<i>John Wink</i>			DATE CONSIDERED 09/08/04

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of the form with next communication to Applicant.

1. The attached cited information should not be construed as an admission that any of the above items are prior art to the subject invention.

2. This is not a representation that a search has been made.

*Date when provided in xx/yy/zz format represents MONTH/DAY/YEAR.

FORM PTO-1449 (Modified for Citation of Foreign
Cited References)

ATTY. DOCKET NO.
USA.02.022

SERIAL NO.
10/091086

O I P E JCB
LIST OF INFORMATION PROVIDED
APR 15 2002 BY APPLICANT

(Use several sheets if necessary)

APPLICANT
STEWART, et al

FILING DATE
March 5, 2002

GROUP
Unknown

REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

Examiner Initial		Document No.	Date*	Patentee	Date* Cited in Foreign Patent Office

OTHER PUBLICATIONS (AUTHOR, TITLE, DATE*, PLACE OF PUBLICATION, PERTINENT PAGES)

			Date* Cited in Foreign P.O.	English Translation Yes	No
TT	PX	The National Technology Roadmap for Electronic Interconnections, Part C-Section 1-Package Style and Physical Attributes, Roadmap 2000/2001; CI-6			
TV	PY	The National Technology Roadmap for Electronic Interconnections, Part D-Section 1-Organic Interconnecting Structures, Roadmap 2000/2001; DI-15			
TT	PZ	Goyal, S, "Role of Shock Response Spectrum in Electronic Product Suspension Design," The International Journal of Microcircuits and Electronic Packaging, Volume 23, Number 2, Second Quarter 2000, pp 182-190			
TT	PAA	Yamaji, Y., "A proposal: the Assessing Method of the CSP's Mechanical Reliability on Board," The International Journal of Microcircuits and Electronic Packaging, Volume 23, Number 1, First Quarter 2000, pp 138-145			
TT	PBB	Goyal, S, "Methods for Realistic Drop-Testing," The International Journal of Microcircuits and Electronic Packaging, Volume 23, Number 1, First Quarter 2000, pp. 45-52			
TT	PCC	Xu, K., "A General Purpose Adhesive for Microelectronic Devices," The International Journal of Microcircuits and Electronic Packaging, Volume 23, Number 1, First Quarter 2000, pp. 78-84			
TT	PDD	Seppala, A, "Flip Chip Joining on GR-4 Substrate Using ACFs," The International Journal of Microcircuits and Electronic Packaging, Volume 24, Number 2, Second Quarter 2001, pp. 148-159			
TT	PCC	Swirbel, T., "Chip Scale Package and Multichip Module Impact on Substrate Requirements for Portable Wireless Products," The International Journal of Microcircuits and Electronic Packaging, Volume 23, Number 3, Third Quarter 2000, pp. 320-324			
TT	PDD	Gilleo, K., "Thermoplastic Adhesives-The Attachment Solution For Multichip Modules," [internet] URL: http://www.cooksonsemi.com/tech_art/staystik.htm			

EXAMINER

Then

DATE CONSIDERED

09/08/04

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of the form with next communication to Applicant.

1. The attached cited information should not be construed as an admission that any of the above items are prior art to the subject invention.

2. This is not a representation that a search has been made.

*Date when provided in xx/yy/zz format represents MONTH/DAY/YEAR

FORM PTO-1449 (Modified for Citation of Foreign
Cited References)

ATTY. DOCKET NO.
USA.02.022

SERIAL NO.
10/091086

O I P E
LAST OF INFORMATION PROVIDED
BY APPLICANT
APR 15 2002

(Use several sheets if necessary)

APPLICANT
STEWART, et al

FILING DATE
March 5, 2002

GROUP
Unknown

REFERENCE DESIGNATION		U.S. PATENT DOCUMENTS		
Examiner Initial		Document No.	Date*	Patentee

OTHER PUBLICATIONS (AUTHOR, TITLE, DATE*, PLACE OF PUBLICATION, PERTINENT PAGES)

			Date* Cited in Foreign P.O.	English Translation Yes	No
TJ	PEE	Gilleo, K., "New Generation Underfills Power The 2 nd Flip Chip Revolution," [internet] URL: http://www.cooksonsemi.com/tech_art/polysolder.htm			
TJ	PFF	Hung,S.C., "Board Level Reliability of Chip Scale Packages," The International Journal of Microcircuits and Electronic Packaging, Volume 23, Number 1, First Quarter 2000, pp. 118-130			
TJ	PGG	Gilleo, K., "Transforming Flip Chip into CSP with Reworkable Wafer-Level Underfill," [internet] URL: http://www.cooksonsemi.com/tech_art/staychip.htm			
TJ	PHH	Gilleo, K, "The Ultimate Flip Chip-Integrated Flux/Underfill," [internet] URL: http://www.cooksonsemi.com/tech_art/staychip.htm			
TJ	PII	Preveti, M., "No Flow Underfill Reliability is Here," [internet] URL: http://www.cooksonsemi.com/tech_art/staychip.htm			
TJ	PJJ	Gilleo, K., "The Chemistry & Physics of Underfill," [internet] URL: http://www.cooksonsemi.com/tech_art/staychip.htm			
TJ	PKK	Harper, P., "Thermoplastic Die Attach For Hermetic Packaging," The International Journal of Microelectronics and Electronic Packaging, Vol. 17, No. 4, Fourth Quarter, 1994, pp			
TJ	PLL	Gilleo, K., "Molded Underfill for Flip Chip in Package," [internet] June, 2000; URL: http://www.cooksonsemi.com/tech_art/staychip.htm			

EXAMINER

Thin film

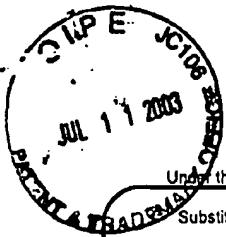
DATE CONSIDERED 09/09/04

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of the form with next communication to Applicant.

1. The attached cited information should not be construed as an admission that any of the above items are prior art to the subject invention.

2. This is not a representation that a search has been made.

*Date when provided in xx/yy/zz format represents MONTH/DAY/YEAR



PTO/SB/08A (02-03)

Approved for use through 04/30/2003, OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Shee

1

1

2

Complete if Known	
Application Number	10/091, 086
Filing Date	03/05/2002
First Named Inventor	Stewart, Steven L.
Art Unit	
Examiner Name	
Attorney Docket Number	US.01.012

U. S. PATENT DOCUMENTS

RECEIVED
JUL 15 2003
GROUP 1700

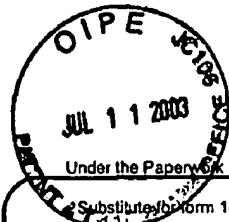
FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁴
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
TJ		EP 0729182A	08-28-1996	Matsushita Electric Inc		
TJ		DE 19822470A	12-09-1999	Litton Precision Product		
TJ		JP 08250835A	09-27-1996	NEC Corp		
TJ		JP 10335527A	12-18-1998	NEC Corp		
TJ		JP 03036788A	02-18-1991	Murata Mfg Co Ltd		
TJ		JP 04249307A	09-04-1992	Nippon Chemicon Corp		

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language translation is attached.

Translation is attached.
This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.



PTO/SB/08A (02-03)

Approved for use through 04/30/2003. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary.)

Shee

2

1

U. S. PATENT DOCUMENTS

RECEIVED
JUL 15 2003
GROUP 1700

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				
T1		JP 05347474 A	12-27-1993	Matsushita Electric Ind		
T1		JP 57068053 A	04-26-1982	Seiko Epson Corp		
T1		JP 04352491 A	12-7-1992	Matsushita Electric Ind		

***EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.¹ Applicant's unique citation designation number (optional).² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04.³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).⁴ For Japanese patent documents, the Indication of the year of the reign of the Emperor must precede the serial number of the patent document.⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.